

WHAT IS CLAIMED IS:

1 1. An isolated polynucleotide comprising a sequence selected from the
2 group consisting of:

3 (a) the sequences provided in SEQ ID NOs:10,486 – 10,536; SEQ ID
4 NOs:10,537 – 10,580; SEQ ID NOs:10,581 – 10,596; SEQ ID NO:10,597; SEQ ID
5 NO:10,845; SEQ ID NO:10,846; SEQ ID NO:10,970; SEQ ID NO:10,971; SEQ ID
6 NO:10,972; SEQ ID NO:10,973; and SEQ ID NO:10,974;

7 (b) complements of any of the sequences provided in SEQ ID NOs:10,486
8 – 10,536; SEQ ID NOs:10,537 – 10,580; SEQ ID NOs:10,581 – 10,596; SEQ ID NO:10,597;
9 SEQ ID NO:10,845; SEQ ID NO:10,846; SEQ ID NO:10,970; SEQ ID NO:10,971; SEQ ID
10 NO:10,972; SEQ ID NO:10,973; and SEQ ID NO:10,974;

11 (c) sequences having at least 90% identity to any one of the sequences
12 provided in SEQ ID NOs:10,486 – 10,536; SEQ ID NOs:10,537 – 10,580; SEQ ID
13 NOs:10,581 – 10,596; SEQ ID NO:10,597; SEQ ID NO:10,845; SEQ ID NO:10,846; SEQ
14 ID NO:10,970; SEQ ID NO:10,971; SEQ ID NO:10,972; SEQ ID NO:10,973; and SEQ ID
15 NO:10,974; and

16 (d) degenerate variants of any one of the sequences provided in SEQ ID
17 NOs:10,486 – 10,536; SEQ ID NOs:10,537 – 10,580; SEQ ID NOs:10,581 – 10,596; SEQ ID
18 NO:10,597; SEQ ID NO:10,845; SEQ ID NO:10,846; SEQ ID NO:10,970; SEQ ID
19 NO:10,971; SEQ ID NO:10,972; SEQ ID NO:10,973; and SEQ ID NO:10,974.

1 2 An isolated polypeptide comprising an amino acid sequence selected
2 from the group consisting of:

3 (a) sequences encoded by a polynucleotide of claim 1; and

4 (b) sequences having at least 90% identity to a sequence encoded by a
5 polynucleotide of claim 1.

1 3. An expression vector comprising a polynucleotide of claim 1
2 operably linked to an expression control sequence.

1 4. A host cell transformed or transfected with an expression vector
2 according to claim 3.

1 5. An isolated antibody, or antigen-binding fragment thereof, that
2 specifically binds to a polypeptide of claim 2.

1 6. A method for detecting the presence of a cancer in a patient,
2 comprising the steps of:

- 3 (a) obtaining a biological sample from the patient;
4 (b) contacting the biological sample with a binding agent that binds to a
5 polypeptide of claim 2;
6 (c) detecting in the sample an amount of polypeptide that binds to the
7 binding agent; and
8 (d) comparing the amount of polypeptide to a predetermined cut-off value
9 and therefrom determining the presence of a cancer in the patient.

1 7. A fusion protein comprising at least one polypeptide according to
2 claim 2.

1 8. The fusion protein of claim 7, further comprising Ra12.

1 9. The fusion protein of claim 7, further comprising a His tag.

1 10. An oligonucleotide that hybridizes to the polynucleotides of claim 1.

1 11. A method for stimulating and/or expanding T cells specific for a
2 tumor protein, comprising contacting T cells with at least one component selected
3 from the group consisting of:

- 4 (a) polypeptides according to claim 2;
5 (b) polynucleotides according to claim 1; and
6 (c) antigen-presenting cells that express a polypeptide according to claim
7 1, under conditions and for a time sufficient to permit the stimulation
8 and/or expansion of T cells.

1 12. An isolated T cell population, comprising T cells prepared according to
2 the method of claim 11.

1 13. A composition comprising a first component selected from the group
2 consisting of physiologically acceptable carriers and immunostimulants, and a second

3 component selected from the group consisting of:

- 4 (a) polypeptides according to claim 2;
- 5 (b) polynucleotides according to claim 1;
- 6 (c) antibodies according to claim 5;
- 7 (d) fusion proteins according to claim 7;
- 8 (e) T cell populations according to claim 12; and
- 9 (f) antigen presenting cells that express a polypeptide according to claim 2.

1 14. A method for stimulating an immune response in a patient, comprising
2 administering to the patient a composition of claim 13.

1 15. A method for the treatment of a cancer in a patient, comprising
2 administering to the patient a composition of claim 13.

1 16. A method for determining the presence of a cancer in a patient,
2 comprising the steps of:
3 (a) obtaining a biological sample from the patient;
4 (b) contacting the biological sample with an oligonucleotide according to
5 claim 10;
6 (c) detecting in the sample an amount of a polynucleotide that hybridizes
7 to the oligonucleotide; and
8 (d) comparing the amount of polynucleotide that hybridizes to the
9 oligonucleotide to a predetermined cut-off value, and therefrom
10 determining the presence of the cancer in the patient.

1 17. A diagnostic kit comprising at least one oligonucleotide according to
2 claim 10.

1 18. A diagnostic kit comprising at least one antibody according to claim 5
2 and a detection reagent, wherein the detection reagent comprises a reporter group.

1 19. A method for inhibiting the development of a cancer in a patient,
2 comprising the steps of:

- 3 (a) incubating CD4+ and/or CD8+ T cells isolated from a patient with at
4 least one component selected from the group consisting of: (i)
5 polypeptides according to claim 2; (ii) polynucleotides according to

claim 1; and (iii) antigen presenting cells that express a polypeptide of claim 2, such that T cell proliferate;

- (b) administering to the patient an effective amount of the proliferated T cells, and thereby inhibiting the development of a cancer in the patient.

20. An isolated polynucleotide comprising a sequence selected from the group consisting of:

- (a) sequence provided in SEQ ID NO:10,469 or SEQ ID NO:10,470;
- (b) complements of the sequence provided in SEQ ID NO:10,469 or SEQ ID NO:10,470;
- (c) sequences having at least 90% identity to SEQ ID NO:10,469 or SEQ ID NO:10,470; and
- (d) degenerate variants of SEQ ID NO:10,469 or SEQ ID NO:10,470.

21. An isolated polypeptide comprising an amino acid sequence provided in SEQ ID NO:10,471 or SEQ ID NO:10,474.

22. An isolated polynucleotide comprising a sequence selected from the group consisting of:

- (a) sequence provided in SEQ ID NO:10,480;
- (b) complements of the sequence provided in SEQ ID NO:10,480;
- (c) sequences having at least 90% identity to a sequence of SEQ ID NO:10,480; and
- (d) degenerate variants of a sequence provided in SEQ ID NO:10,480.

23. An isolated polypeptide comprising an amino acid sequence of SEQ ID NO:10,481.

24. An isolated polypeptide comprising an amino acid sequence selected from the group consisting of:

- (a) sequences encoded by a polynucleotide of claim 20 or 22; and
- (b) sequences having at least 90% identity to a sequence encoded by a polynucleotide of claim 20 or 22.

1 25. An isolated polypeptide comprising an amino acid sequence selected
2 from the group consisting of:

3 (a) sequences provided in any one of SEQ ID NOs:10,599 – 10,819; and

4 (b) sequences provided in any one of SEQ ID NOs:10,820 – 10,842.

1 26. An isolated polypeptide comprising an amino acid sequence selected
2 from the group consisting of:

3 (a) sequences provided in any one of SEQ ID NOs:10,849 – 10,908; and

4 (b) sequences provided in any one of SEQ ID NOs:10,909 – 10,968.

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